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BEFORE THE
POSTAL REGULATORY COMMISSION
WASHINGTON, D.C. 20268-0001

MAIL PROCESSING NETWORK RATIONALIZATION SERVICE CHANGES, 2011	Docket No. N2012-1

RESPONSES OF UNITED STATES POSTAL SERVICE WITNESS BRADLEY TO PUBLIC REPRESENTATIVE INTERROGATORIES PR/USPS-T10-1 THROUGH 6
(January 4, 2012)

United States Postal Service witness Michael Bradley (USPS-T-10) provides responses to the above-listed interrogatories of the Public Representative dated December 21, 2011. Each interrogatory is stated verbatim and followed by the response.

Respectfully submitted,

UNITED STATES POSTAL SERVICE

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RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS BRADLEY
TO PUBLIC REPRESENTATIVE INTERROGATORY

PR/USPS-T-10-1

Please refer to page 6 of your testimony, which states "certain costs in individual cost pools…are institutional costs… associated with the establishment of an operation at a location not the workload in the operation…[consequently], a reduction in the total number of locations will reduce the total institutional cost for the associated cost pool. The transfer of workload to a smaller number of sites thus reduces the amount of institutional cost…."

a. Would you agree that the volume variable cost of a mail processing cost pool is the variability of that cost pool multiplied by its accrued costs? If not, please explain.

b. Would you also agree that the institutional cost of a mail processing cost pool is 1 minus the cost pool's variability, multiplied by its accrued costs? If not, please explain.

c. Would you agree that if there are two locations where the mail processing activity of a particular cost pool is performed, and all volume from one location is transferred to the other so that total volume of the cost pool is unchanged, as is its volume variability, then total institutional costs will also be unchanged? If not, please explain.

d. More generally, would you agree that only the institutional costs of the activities or cost pools at a plant that are completely unrelated to volume, such as the time the Postmaster General spends visiting, would be eliminated if the plant was eliminated? If not, please explain.

RESPONSE:

(a) Agree.

(b) Agree.

(c) Do not agree. Both the total institutional cost and the volume variability will change from such a transfer. Under the Postal Regulatory Commission methodology for determining the volume variability of mail processing labor costs, the variability of a cost pool is determined by

identification of those costs which are institutional (non-volume-variable) and those costs which are 100 percent volume variable:[1]

> The remaining activities (excluding the out-of-office Express Mail pick up/delivery) are then identified into two groups, non-volume-variable (or 0 percent volume-variable) and 100 percent volume-variable. Non-volume-variable activity codes from IOCS are: 6210, 6230, 6240, 6430, 6525. All costs for volume-variable activities are distributed to subclasses. The cost pool volume-variability factor is computed by taking the ratio of the 100 percent volume-variable costs to the sum of these costs plus the non-volume-variable costs.

This approach can be represented analytically by labeling the institutional or non-volume variable costs as α and the 100 percent volume-variable costs as βV The variability of cost with respect to volume is the ratio of the 100 percent volume-variable costs to those costs plus the non-volume-variable costs:

$$Variability = \frac{\beta V}{\alpha + \beta V}$$

It is easy to show that this is equivalent to specifying cost as a linear function of volume, in which total cost for the cost pool is the sum of the institutional and volume-variable costs:

$$Cost = \alpha + \beta V .$$

The volume variability for this function is just the elasticity of cost with respect to volume:

$$\varepsilon_{C,V} = \frac{\partial C}{\partial V}\frac{V}{C} = \frac{\beta V}{\alpha + \beta V}$$

[1] See, United States Postal Service, "Summary Description Of USPS Development Of Costs by Segments And Components, Fiscal Year 2010" at 3-6

Now consider the scenario posed in the interrogatory. There are two locations sorting mail, each doing the necessary non-volume-variable and volume-variable activities required to accomplish the sorting. If the first facility is called Facility "A," its mail processing labor cost for operation "j" is given by:

$$C_{Aj} = [\alpha_{Aj} + \beta_j(V_{Aj})]$$

If the second facility is called Facility "B," its mail processing labor cost is given by:

$$C_{Bj} = [\alpha_{Bj} + \beta_j(V_{Bj})]$$

The total mail processing cost is just the sum of the costs for the two facilities:

$$C_j = [\alpha_{Bj} + \beta_j(V_{Bj}) + \alpha_{Aj} + \beta_j(V_{Aj})].$$

The variability of this cost pool is given by the ratio of volume variable costs to total costs:

$$\varepsilon_j = \frac{\beta_j(V_{Aj} + V_{Bj})}{\alpha_{Bj} + \beta_j(V_{Bj}) + \alpha_{Aj} + \beta_j(V_{Aj})}$$

Now, as specified in the interrogatory, suppose that the volume from one facility (Facility B) is transferred to facility A. Facility A still must undertake its non-volume-variable activities but will increase the amount of volume-variable cost it incurs because of the additional workload. Total cost is now just Facility A's cost:

$$C_j = [\alpha_{Aj} + \beta_j(V_{Aj} + V_{Bj})].$$

Notice that total institutional cost has fallen and the new overall cost is clearly less than the previous combined cost. In addition, the volume variability for the new scenario is given by the new ratio of volume variable cost to total cost:

$$\varepsilon_I = \frac{\beta_1(V_{A1} + V_{B1})}{\alpha_{A1} + \beta_1(V_{A1} + V_{B1})}$$

This is clearly larger than the previous variability.

(d) Institutional costs, by their definition, are unrelated to volume. That is why they are not distributed to products. Therefore if a plant becomes inactive, its institutional costs disappear.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS BRADLEY
TO PUBLIC REPRESENTATIVE INTERROGATORY

PR/USPS-T-10-2

Please refer to page 11 of your testimony, which states that "the productivity for a mail processing operation after the workload transfer has taken place…is given by the ratio of the operation's workload to its accrued hours." Please answer the following questions about the term "accrued hours."

a. Would you agree that accrued mail processing hours in this case are the accumulated labor hours of employees clocked into the mail processing operation to which you refer? If not, please explain.
b. Would it be at least as accurate to define productivity after the transfer of all volume from location A to location B, as the ratio of the mail processing operation's volume, to the time it takes to process that volume? If not, please explain.
c. Would it not be true in this case, that the volume variability of this mail processing cost pool will not change, because the volume variability for this cost pool is the average volume variability of the cost pool at all locations? If not, please explain.
a. Wouldn't it also be true in this case, where total volume is unchanged, volume variability is unchanged, and labor hours utilized are unchanged, that productivity would remain unchanged as well? If not, please explain.

RESPONSE:

a. Agree

b. To the extent your phrase "the time it takes to process that volume" is the same as the accumulated hours of the employees in that operation, then this second definition would be accurate.

c. No, it is not true. As explained in my response to PR/USPS-T10-1, the volume variability will change.

d. No. As explained in my response to PR/USPS-T10-1, the volume variability and total hours required to sort the mail will change. In fact, because fewer non-volume-variable activities will be taking place, the accrued hours will fall and the productivity will rise.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS BRADLEY
TO PUBLIC REPRESENTATIVE INTERROGATORY

PR/USPS-T-10-3

Please assume that productivity improvements in letter processing come largely from the reduction in excess capacity in the incoming secondary network, made possible by the near elimination of outgoing secondary operations, as discussed by Rosenberg (USPS-T-3 at 11), Neri (USPS-T-4 at 27), and Smith (USPS-T-9 at 24). Would you agree that:

a. if the throughput of a DBCS is 30,000 pieces per hour, was idle three hours during a shift, but the entire eight hours of labor was considered as part of accrued costs, the productivity of the DBCS would be 30,000 x (5/8), or 150,000/8 = 18,750 pieces per hour. If not, please explain.
b. if network realignment allows the incoming DBCS to sort volume the entire time of an eight hour shift, it would sort 8 x 30,000 = 240,000 pieces in an 8 hour shift. In this case, DBCS productivity would be 240,000/8 = 30,000 pieces per hour, and represent a 60 percent increase in productivity. If not, please explain.
c. the appropriate formula for productivity improvement when the only change is due to the elimination of excess capacity, and there is a constant labor time "clocked-in" during the two capacity situations, is

$$\rho = \frac{V_f}{V_e} - 1$$

Where V_f = Volume produced at full capacity, and
V_e = Volume produced where there is unused capacity.

RESPONSE:

The preamble to the questions seems to suggest that various Postal Service witnesses have asserted that productivity improvements have come primarily from the reduction in excess capacity in the incoming secondary operations. However, my review of the cited passages could not find any support, or even mention, of that assertion. What I did find was a variety of

explanations for productivity increases. For example, according to witness Rosenberg:[2]

> In summary, the Excel tool is a rational way of developing a starting point for discussion to illustrate the opportunities presented by relaxing service standards. By relaxing service standards, operating windows can be expanded. Expanded operating windows allow for the same volume to be processed on fewer machines.

Witness Neri provides the following description on the cited page:[3]

> Productivity opportunities are gained through balancing of the processing profile. As shown in the following graph, our current service standards require an operating plan that causes an unbalanced processing profile, with consequent negative productivity impacts. Under the current service standards, the percentage of letters available for processing fluctuates greatly across different time periods each day. As processing windows are expanded and the workload is balanced across the mail processing day, the Postal Service would be able to manage processing operations effectively, match workhours to workload, and plan for peak load issues.

Finally, witness Smith states:[4]

> The consolidation of the network into a smaller number of sites allows additional automation of letters sorting. There is an opportunity to move mail currently processed in manual operations into automated or mechanized operations, which require less workhours to process the same volume. Also, there are opportunities for productivity improvements by doing

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[2] See, "Direct Testimony of Emily R. Rosenberg on Behalf of the United States Postal Service," Docket No. N2012-1,USPS-T-3, at 11.

[3] See, "Direct Testimony Frank Neri on Behalf of the United States Postal Service," Docket No. N2012-1,USPS-T-4, at 27.

[4] See, "Direct Testimony Marc A. Smith on Behalf of the United States Postal Service," Docket No. N2012-1,USPS-T-9, at 24

additional DPS for the remaining automation-compatible and non-DPS letter volumes.

a. This hypothetical appears to be assuming that 150,000 pieces are sorted on a single BCS machine over eight hours. It also implicitly assumes only one worker is associated with that machine and that worker does not clock into any other operation. Under these assumptions the workload is 150,000 pieces sorted and the hours used are 8. Using the formula provide on page 11 of my testimony, the productivity would be 150,000/8 or 18,750. Note that there is nothing in this calculation that requires the assumption of excess capacity.

b. This hypothetical appears to be assuming that 240,000 pieces are sorted on a single BCS machine over eight hours. It also implicitly assumes only one worker is associated with that machine and that worker does not clock into any other operation. Under these assumptions the workload is 240,000 pieces sorted and the hours used are 8. Using the formula provide on page 11 of my testimony, the productivity would be 240,000/8 or 30,000. Note that there is nothing in this calculation that requires the assumption of excess capacity. The productivity in this hypothetical scenario is 60 percent higher than the productivity in the hypothetical scenario presented presented in sub-part a. above.

c. This hypothetical imposes the restriction that hours do not change. Because productivity is the ratio of workload to hours, if one specifies that hours may not change, then the only way productivity can change is through a change in workload. It is another matter altogether to link

excess capacity to a complete lack of change in hours. Consequently, I would suggest that the appropriate formula for productivity improvement when the only change is due to the elimination of excess capacity is the one given on page 12 of my testimony.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS BRADLEY
TO PUBLIC REPRESENTATIVE INTERROGATORY

PR/USPS-T-10-4

Please provide an electronic copy of the data and program used to make all or part of the following calculations:

a. Cost before productivity gain in Table 4.
b. Ratio of mail processing supervisory hours to mail processing hours being supervised.
c. Labor Costs in LDCs 11-18 use in Table 6.
d. LDC 80 hours at inactive sites in Table 7.
a. In plant support hours by LDC 1 – 9 in Table 8.

RESPONSE:

a. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the costs before productivity gains are calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Calc Labor Cost Savings." Please see column "I" which is entitled, "Realigned Network Cost Before Productivity Gain."

b. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the requested supervisor ratio is calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Calc Supervisor Cost Savings." Please see column "G" which is entitled "Ratio." The raw data used to calculate the ratio are also presented in USPS-LR-N2012-1/20 in the Excel file entitled, "FY2010 MODS Hours.xls." The program used to create the summations used in the calculations is also provided in the library reference. It is entitled "Create MODS Hours.Sas."

c. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the change in labor costs in LDCs 11-18 used in Table 6 are calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Calc Labor Cost Savings." Please see column "N" which is entitled, "Cost Change."

d. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the calculation of plant management cost savings is calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Calc Mngnt and IPS Cost Savings." The source of the LDC 80 hours is the SAS program entitled "Create MODS Hours.Sas." That SAS program, its output, and the raw data it processes are all included in Library Reference USPS-LR-N2012-1/20.

e. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the calculation of in-plant support cost savings is calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Calc Mngnt and IPS Cost Savings." The source of the LDC 1-9 hours is the SAS program entitled "Create MODS Hours.Sas." That SAS program, its output, and the raw data it processes are all included in Library Reference USPS-LR-N2012-1/20.

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS BRADLEY
TO PUBLIC REPRESENTATIVE INTERROGATORY

PR/USPS-T-10-5

Please refer to page 28 of your testimony, where you list the factors used to determine the change in indirect costs brought about by network realignment. Please provide a source or citation for each of the factors. The factors are:

a. change in mail processing labor costs due to workload transfer,
b. productivity gains,
c. restructuring of management,
d. restructuring of supervision, and
b. restructuring of technical support.

RESPONSE:

a. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the indirect cost savings are calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Summary." The workload transfer factor is given in the row entitled, "Workload Transfer Cost Change."

b. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the indirect cost savings are calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Summary." The productivity gain factor is given in the row entitled, "Productivity Gain Cost Change."

c. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the indirect cost savings are calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Summary." The management restructuring factor is given in the row entitled, "Plant Management Change."

d. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the indirect cost savings are calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Summary." The supervision restructuring factor is given in the row entitled, "Supervisor Cost Change."

e. Please see Library Reference USPS-LR-N2012-1/20. As explained in that library reference, the indirect cost savings are calculated in the workbook entitled "Mail Processing Labor Cost Savings.xls," in the tab entitled, "Summary." The technical support restructuring factor is given in the row entitled, "In-Plant Support Cost Change."

RESPONSE OF UNITED STATES POSTAL SERVICE WITNESS BRADLEY
TO PUBLIC REPRESENTATIVE INTERROGATORY

PR/USPS-T-10-6

Please refer to Library Reference USPS-LR-22 Hwy Savings, PVS Closings.xls, which lists the finance numbers of the locations that which will change from being a PVS site to one where former PVS mail is handled by Highway Contract Route transportation.

a. Please explain what criteria were used to discontinue a PVS site.
b. Please provide an electronic copy of the data and program(s) used to make this calculation/determination.
c. Please also provide an electronic copy of the VMAS and any other source of data, as well as the program(s), used to calculate the cost of converting PVS sites to HCR Transportation.

RESPONSE:

a. It is my understanding that a PVS site was considered to be discontinued when its associated P&DC was no longer active in the realigned network. As indicated in my testimony, this determination was made by witness Martin. Please see, "Direct Testimony of Cheryl D. Martin on Behalf fo the United States Postal Service," Docket No. N2012-1, USPS-T-6 at Section II.B.

b. My understanding is that witness Martin simply identified those PVS sites whose associated P&DC was no longer active in the realigned network. An electronic copy of the list of such sites is included in USPS-LR-22, in the workbook entitled, "PVS Closings.xls."

c. All of the data and programs I used in calculating the cost of converting PVS sites to HCR transportation are contained in USPS-LR-N2012-1/22. The calculations and VMAS data are in the workbook entitled, "PVS Cost Savings.xls." The VMAS data I used is presented in columns 'H" and "I". As explained in the library reference, the MODS data produced by the

included program entitled “Create.PVS.Hours.Sas,” which I used in the calculations, are presented in columns C through E of the workbook entitled “PVS.Cost Savings.xls.”